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## Patent Abstracts of Japan

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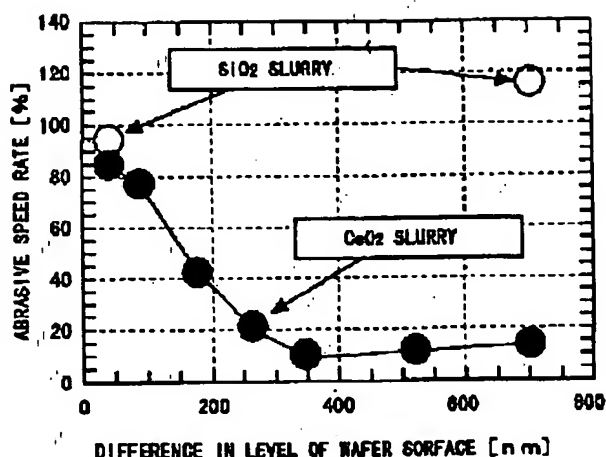
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APPLICANT : MITSUBISHI ELECTRIC CORP;

INVENTOR : KOBAYASHI HIROMICHI;

INT.CL. : H01L 21/76 H01L 21/304

TITLE : MANUFACTURE OF  
SEMICONDUCTOR DEVICE



ABSTRACT : PROBLEM TO BE SOLVED: To form an isolation channel of stable quality with high yield, in the manufacture of a semiconductor device which includes a process for forming an isolation groove for dividing the active region on a semiconductor substrate.

SOLUTION: On a semiconductor substrate, a silicon nitride film is formed which serves as a polish stop film. In a specified region, the silicon nitride film and the semiconductor substrate are removed by etching to form an isolation groove for dividing an active region. Thereafter, a silicon oxide film is so deposited above the semiconductor substrate as to fill the isolation groove. Next, a first stage CMP is conducted with an abrasive material, including SiO<sub>2</sub>, with which the surface of the silicon oxide film can be polished with good efficiency, regardless of the step difference in level. Then, a second stage CMP is conducted with an abrasive material, including CeO<sub>2</sub> having a large polish selectivity with respect to the silicon oxide film and the silicon nitride film.

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